



INFORMATIONAL MEMORANDUM

TO: Transportation Infrastructure Committee
FROM: Hari Ponnekanti, Public Works Director/City Engineer
BY: Adib Altallal, Utilities Engineer
CC: Mayor Allan Ekberg
DATE: April 14, 2023
SUBJECT: Water Fund – Water Reservoir Sites Update
Project No. 91240102
Information Only

ISSUE

Update on potential Water Reservoir sites.

BACKGROUND

During the City of Tukwila’s 2015 Water Comprehensive Plan, the consultant identified that the continued growth within the City no longer meets the Department of Health’s water storage requirements. As a result, the Water Reservoir and Pump Station was included in the Capital Improvement Program. During this year’s Water Comprehensive Plan update, the City’s water storage deficiencies were highlighted again. Further development throughout the City and especially in the Ryan Hill and Tukwila South areas are likely to be hindered or completely halted due to these water storage deficiencies.

During subsequent January 2021 communications with the Transportation and Infrastructure Services Committee, four potential sites were identified. Two of those sites were in the Ryan Hill neighborhood and the other two in the North Hill neighborhood. Both of those neighborhoods have high topography that would reduce pumping costs. A new reservoir will need to be constructed regardless.

ANALYSIS

By constructing a second reservoir, the City would meet the Department of Health’s water storage requirements. During the January 2021 update, a viable site in the Ryan Hill area was for sale and the plan was to construct the reservoir there and connect the neighborhood to the rest of the water system so everyone in the city benefits. That site, however, is no longer available. During the December 2021 update, a willing seller in the North Hill neighborhood was found. After further investigations, it was determined the prevalence of wetlands made the site a poor candidate. Since finding land that meets the City’s criteria has been a difficult endeavor, the prospect of finding two suitable sites appears not to be viable.

In the Summer of 2022, the site of the old Fire Station 52 was identified as a city-owned viable option. The construction of a new reservoir at this site would save the City’s General Fund money by taking over the responsibilities of the demolition and mitigation of the old fire station 52 building. The project would greatly improve the condition of Hazelnut Park by expanding the area and adding recreational items for the residents’ use. Further, the project would retain the old City Hall building and could potentially help improve that building as well. That will be sufficient if the Ryan Hill neighborhood is connected to the rest of the water system. The proposed site at the former Fire Station 52 would enable Ryan Hill to be connected via a pump station as opposed to a different reservoir entirely.

The Committee of the Whole is scheduled to receive a briefing on the project at its April 24, 2023, meeting.

FISCAL IMPACT

The adopted 2023 Capital Improvement Program identified an estimated project budget of \$16 million for the Water Reservoir and corresponding pump station. There would likely be increased staffing needs to operate and maintain the new reservoir as well.

RECOMMENDATION

Information only.

Reservoir Siting

Conceptual Study

14475 59th Avenue S



OVERVIEW | MARCH 2023



01

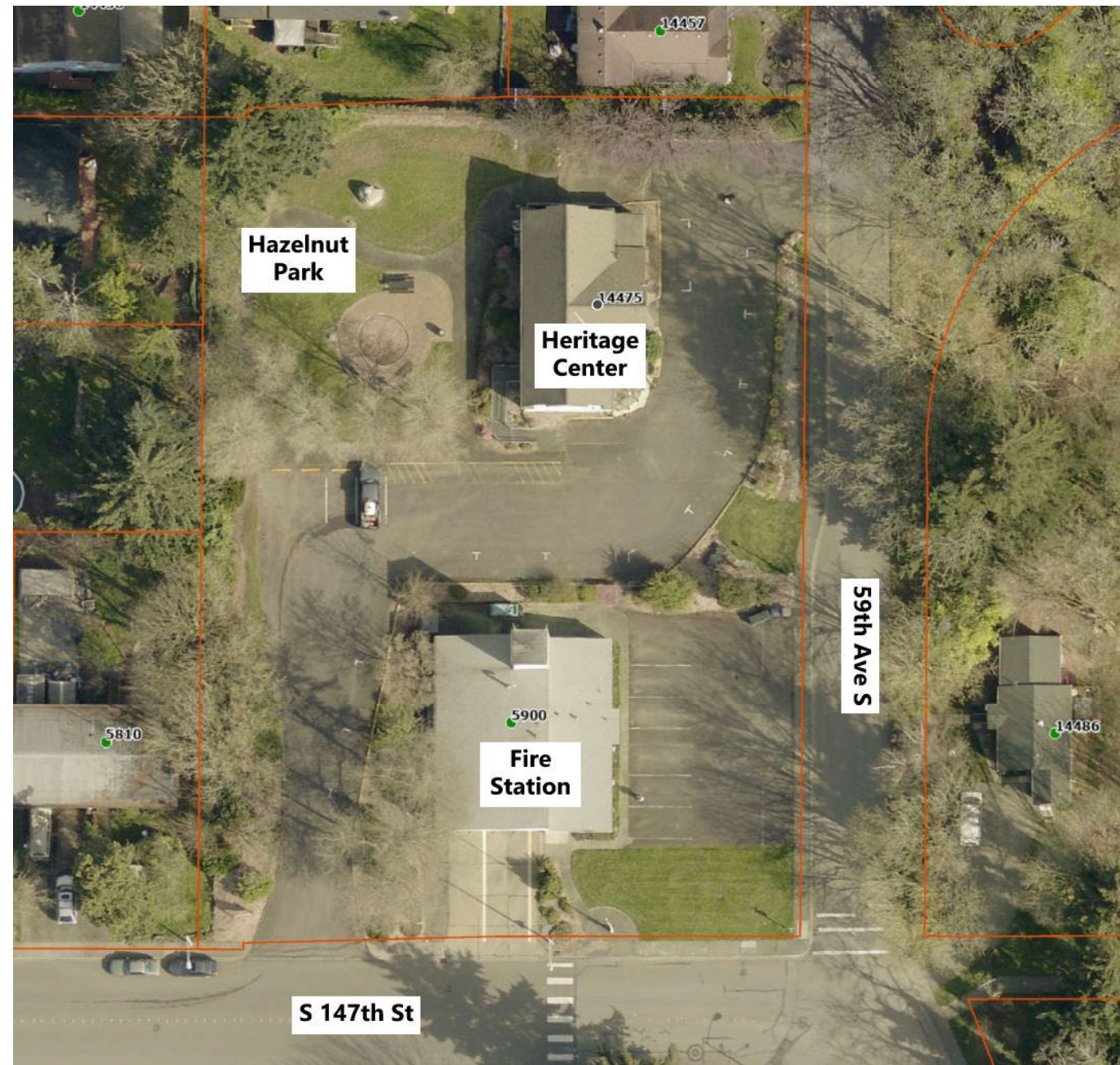
Site Description

Site Location



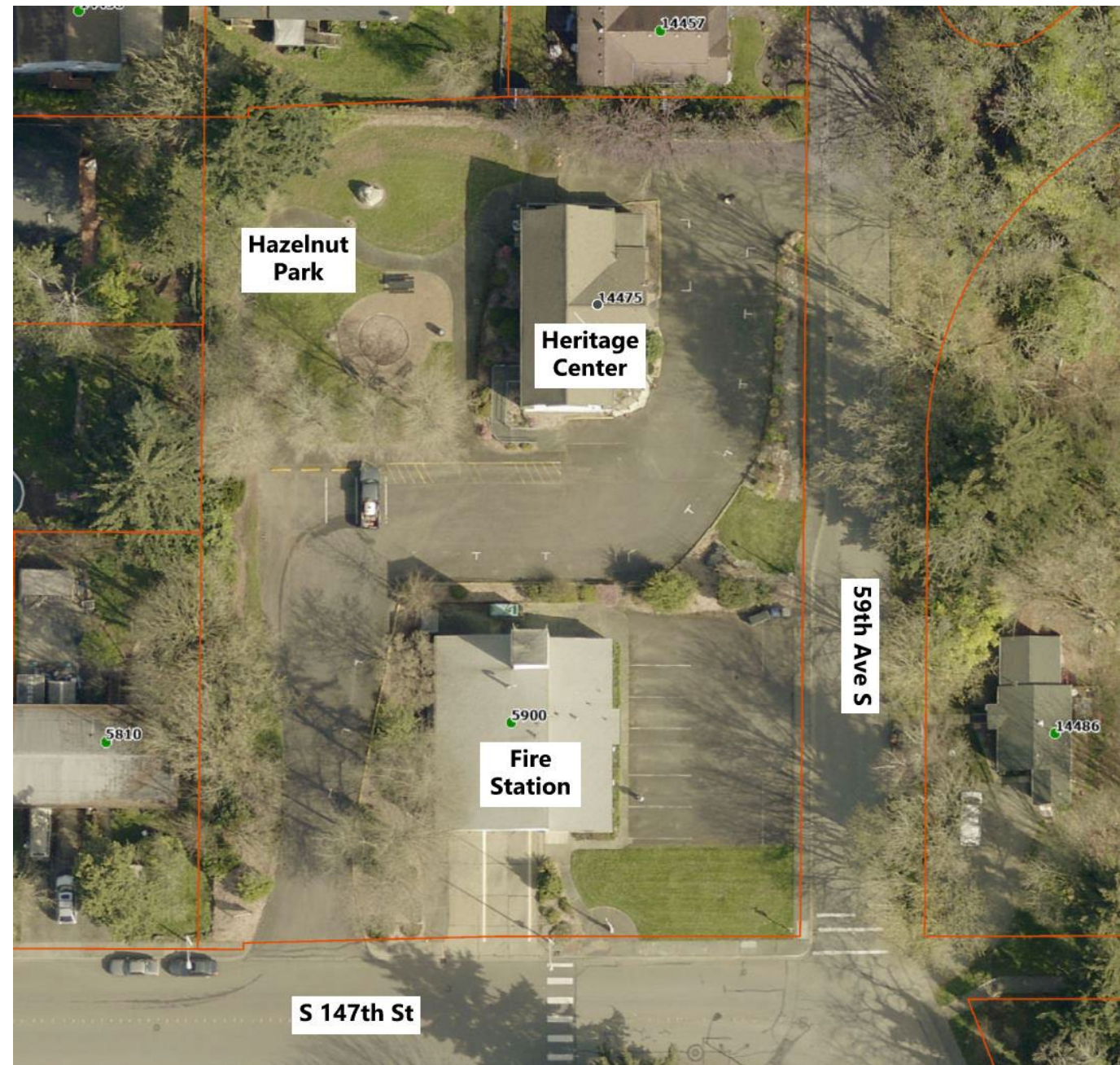
Existing Improvements

- Hazelnut Park to remain/improve
- Tukwila Heritage and Cultural Center to remain
- Vacated fire station to be demolished and its site mitigated.



Site Characteristics

- Generally flat; $\pm 10'$ grade change
- Primarily impervious
- Some trees
- Improved frontages with curb, gutter and sidewalk
- Water, sewer, storm, gas and power available



Environmental Considerations

- Mapped Class 2 (Moderate) and Class 3 (High) Landslide Areas onsite
- Likely to encounter groundwater
 - » Shoring and dewatering will be significant portion of reservoir cost
- Protect/Replace Trees
 - » “Protection of trees shall be a **major factor in the location, design, construction** and maintenance of streets and **utilities.**”



02

Land Use

Zoning

- Low Density Residential (LDR)
- “Water Pump Station” & “Water Utility Reservoir and Related Facilities” are Unclassified Uses within LDR
- Requires Unclassified Use Permit

Lot area, minimum	6,500 sq. ft.
Average lot width (min. 20 ft. street frontage width), minimum	50 feet
Development Area, maximum (only for single family development)	75% on lots less than 13,000 sq. ft. up to a maximum of 5,850 sq. ft.
	45% on lots greater than or equal to 13,000 sq. ft.
Setbacks to yards, minimum:	
• <i>Front</i>	20 feet
• <i>Front, decks or porches</i>	15 feet
• <i>Second front</i>	10 feet
• <i>Sides</i>	5 feet
• <i>Rear</i>	10 feet
Refer to TMC Chapter 18.52, “Landscape Requirements,” Table A, for perimeter and parking lot landscaping requirements.	
Height, maximum	30 feet
Off-street parking:	
• <i>Residential</i>	See TMC Chapter 18.56, Off-street Parking & Loading Regulations
• <i>Accessory dwelling unit</i>	See TMC Section 18.50.220
• <i>Other uses</i>	See TMC Chapter 18.56, Off-street Parking & Loading Regulations

TMC 18.10.060

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Conceptual Layout

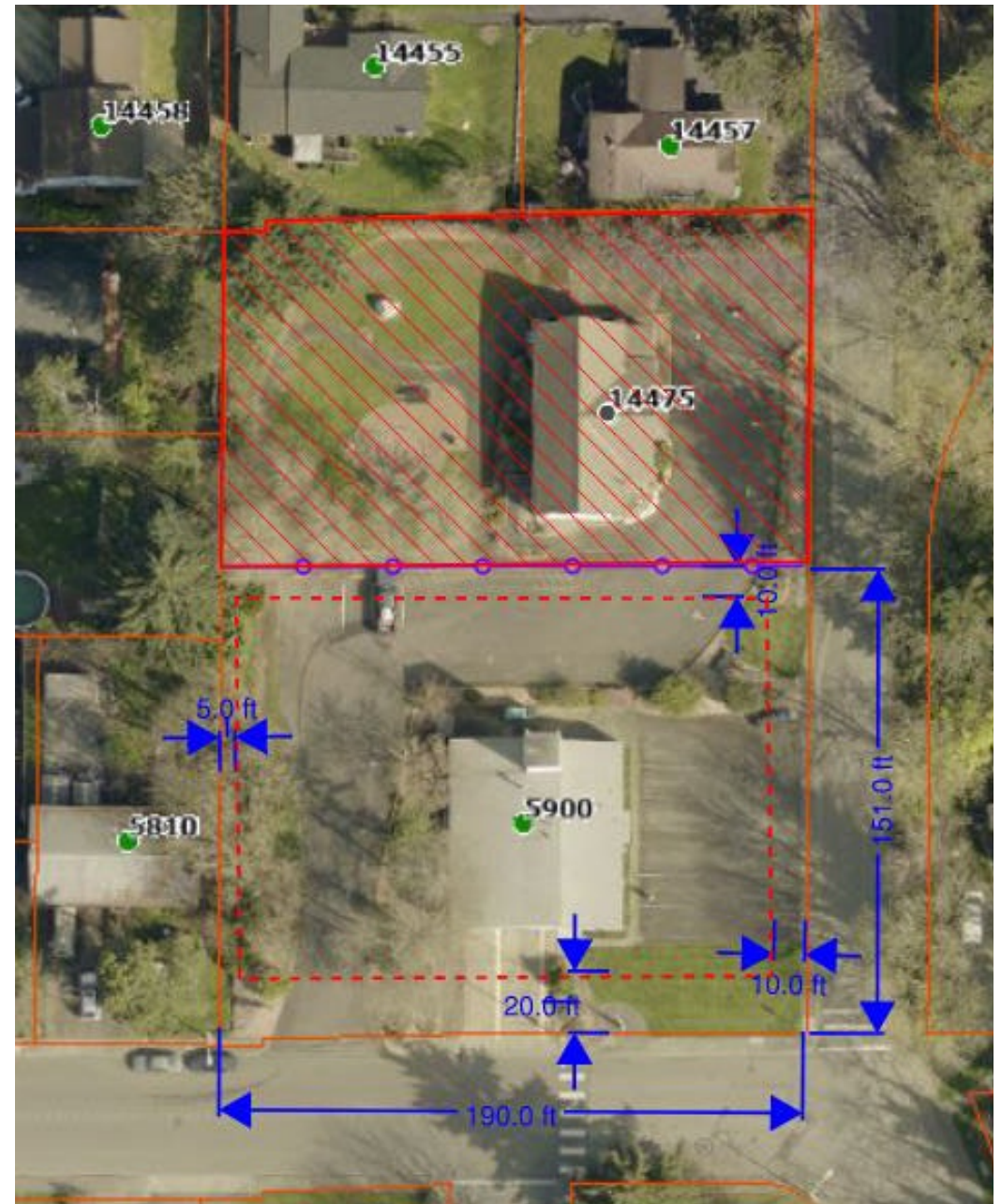
Reservoir Site

- Assumed boundary at south limits of Hazelnut Park
- Park and Heritage Center to remain



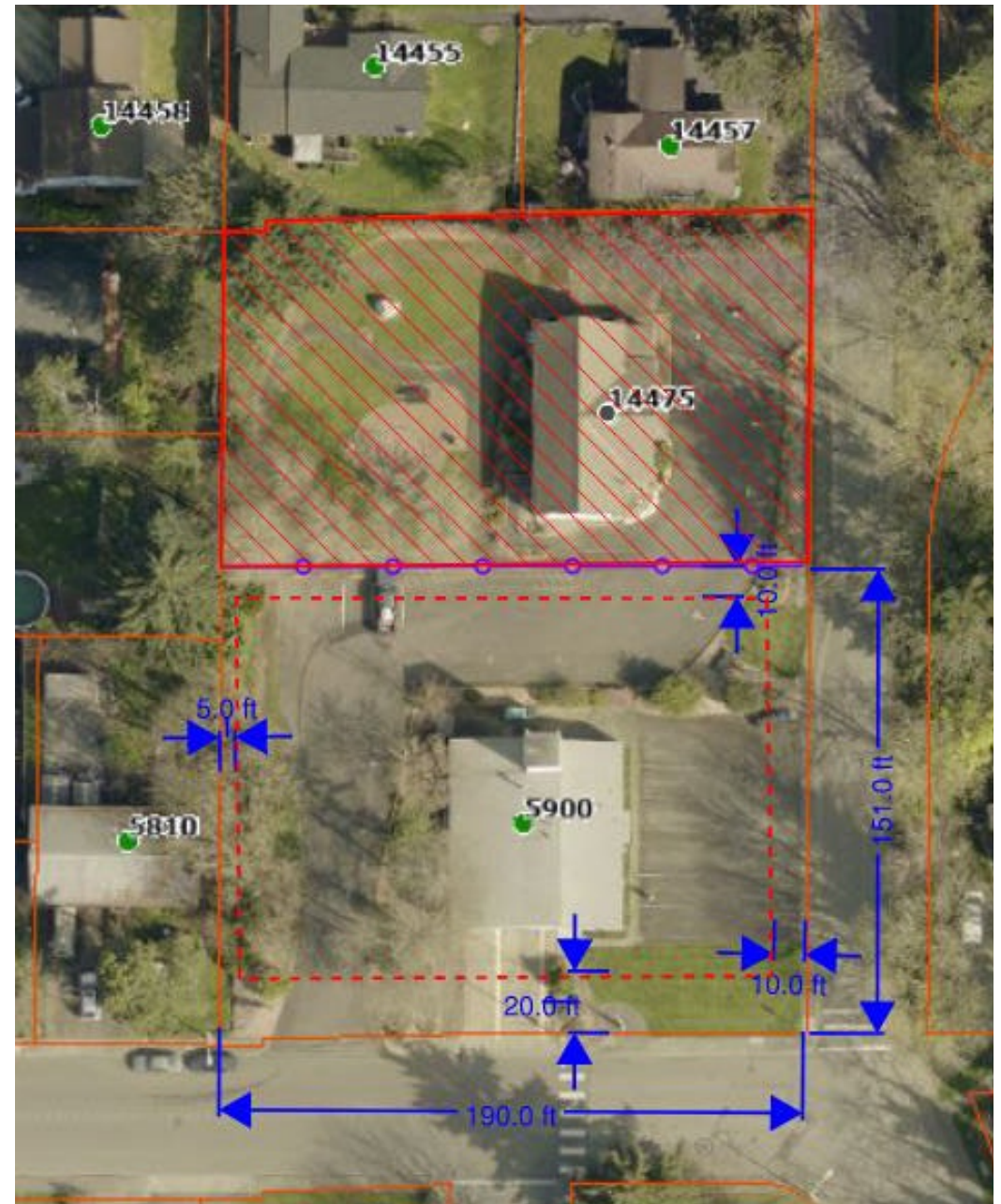
Reservoir Site

- Required yards for LDR zone based on assumed front (S 147th St), side, and rear
- Rear setback from assumed subdivision line



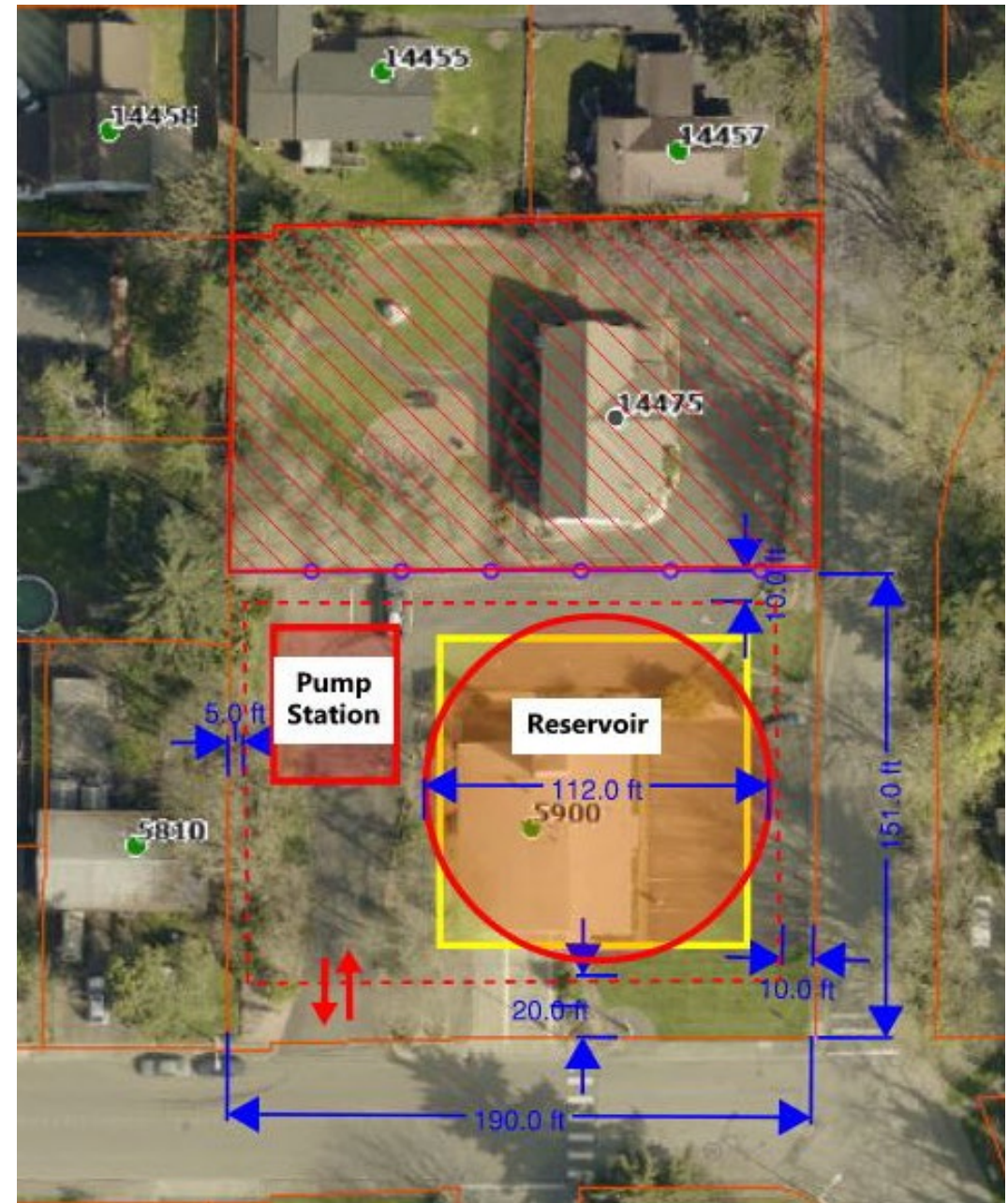
Reservoir Site

- Approximate minimum buildable area with required yards
 - » Alternate layouts possible with reconfiguring of Hazelnut Park space
- Minimum parking (including ADA accessible parking or access) required for park and/or Heritage center?
- Restrictions on parcel due to park classification/funding?



Site Layout

- 2.5 MG reservoir desired
- Conceptual footprint determined with assumed buildable area
 - » Circular: 112' diameter, 34' height
 - » Rectangular: 100' square, 33.5' height
 - » (Does not account for wall thickness or interior supports)
- 40' x 50' footprint for pump station



Example Reservoir (Partially Below Grade)

- 2.5 MG prestressed, partially buried concrete tank
- 112' diameter, 28' height
- Alpine, CA



Example Reservoir (Fully Below Grade)

- Crestview Park, Tukwila
 - » Highline Water District reservoir (7.6 MG)
- Seward Park, Seattle
 - » Seattle Public Utilities CSO storage facility (2.65 MG)



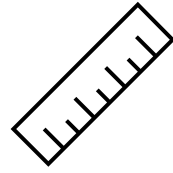
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Key Assumptions & Considerations

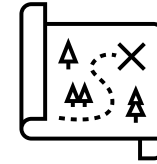
Key Assumptions & Limitations



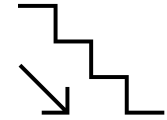
Hydraulic
suitability



Buildable area

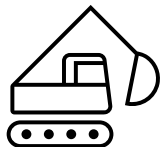


Survey

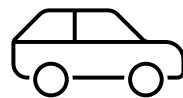


Site grading

Geotechnical &
shoring



Hazelnut Park and
Heritage Center
restrictions



Onsite stormwater
facilities



Classified Use
Permit

